2003 6th GRADE
MAIN RANGEFINDER
1

It is important that you show or explain how you solved the problems on this assessment. If you use a calculator, show how you set up the math.

1. A 6th grade class of 30 students at Sunset School earned an ice cream party. They have $45.00 to spend.

ITEM	SERVINGS	COST
Hot Fudge	6	$2.45
Whipped Cream	10	$1.30
Cherries	15	$0.85
Ice Cream	12	$8.25

a. How many containers of ice cream are needed for each student to have one serving? Show or explain how you found your answer.

I added Hot Fudge cherries and Ice cream together and it would take 8

b. What is the total cost of the ice cream party if each student has ice cream, hot fudge, whipped cream and a cherry? How much change will be returned from the $45.00? or explain how you found your answer.

$32.15

Minimal development of basic skills

c. **About** how much will one serving of hot fudge cost? Show or explain how you found your answer. 40

d. When the party was over, there was ¼ of a container of ice cream left and ¼ of another container of ice cream left. What fraction of one whole container would be remaining? Show or explain how you found your answer.

Lack of process development

Read problems 2, 3, 4, and 5 on this and the next two pages. Select three problems to answer. Answer ALL of the parts of the three problems you select to answer. Cross out the one problem that you do not choose to answer.

2.   A family has decided to put a square sandbox in their backyard.
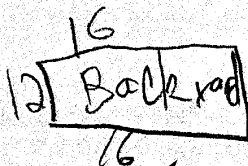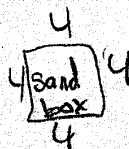

a. What is the perimeter of their backyard? *Show or explain how you found your answer.*
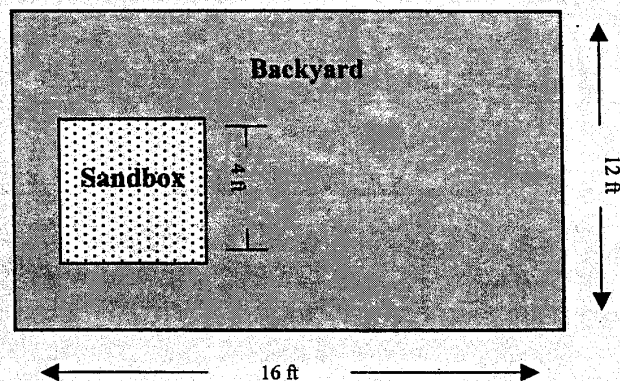
Inappropriate processes

b. In order to put a wooden border around the sandbox and the backyard, how much border is needed? *Show or explain how you found your answer.*

c. The wooden border is sold in 1 yd sections. How many sections does the family need to purchase? *Show or explain how you found your answer.*

$76.00

Numerous computational errors

Minimal evidence of understanding of situations

d. What is the area of the sandbox and what fraction of the total backyard area is this? *Show or explain how you found your answer.*

3.   Jordan's piano practice times are shown in the table below.

Minutes Jordan Practiced						
Day	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
Minutes	30	22	45	15	26	30

a.   What is her average (mean) practice time? *Show or explain how you found your answer.*

If means How long she practiced

> **Inadequate mathematical vocabulary**

b.   What is the mode of her practice times? *Show or explain how you found your answer.*

$$32 + 22 + 45 + 15 + 26 + 30 = 192 =$$

c.   Using the Jordan's six practice times, find her median practice time. *Show or explain how you found your answer.*

Monday, Wednesday Saturday

d.   The piano teacher wants Jordan to practice 30 minutes a day. How many minutes will she have to practice on Sunday to have a mean practice time of 30 minutes? *Show or explain how you found your answer.*

63 minutes

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4.   The circle below represents Mike's free time. Mike reads during ½ of his free time. Sports take up ¼ of his free time. He works on his computer ⅛ of his free time. The rest of his free time is spent hanging out with his friends.

a.   Use the circle at the right to graph how Mike spends his free time? *Label the graph and each section.*

> **Significant lack of structure**
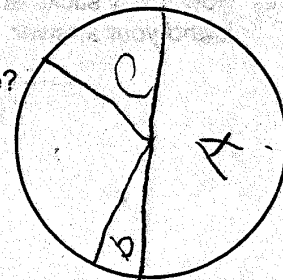
b.   What fraction of his free time is spent hanging out with his friends? *Show or explain how you found your answer.*

c.   If he spends 60 minutes reading, how many minutes are spent working on his computer? *Show or explain how you found your answer.*

5. Terry used Popsicle sticks to make the first four figures of the pattern below.

Figure 1   Figure 2   Figure 3   Figure 4

a. Complete the table by using the pattern from the figures. *Show or explain how you found your answer.*

Figure Number	Number of Sticks
1	4
2	7
3	9
4	10

b. How many sticks are required to make figure 7 in the pattern? *Show or explain how you found your answer.*

Minimal problem-solving strategies

c. How many sticks are required to make figure 25 in the pattern? *Show or explain how you found your answer.*

$13 = 25$
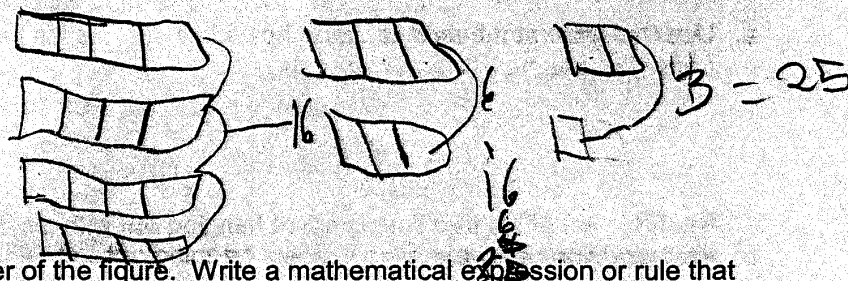
d. Let *n* represent the number of the figure. Write a mathematical expression or rule that explains the relationship between the number of the figure and the number of sticks needed. *Show or explain how you found your answer.*

$4 - 4s + 2\ 3s + 1\ 2s + 1\ 1s = 25$